



East Central District Meeting and Rubber and Plastics Conference April 22-24, 1959 Akron, Ohio

Headquarters
Hotel Sheraton

Schedule of Events

April 21—TUESDAY

Registration—8 P.M.-10 P.M.
Early Bird Reception—8 P.M. to 10 P.M.

April 22—WEDNESDAY

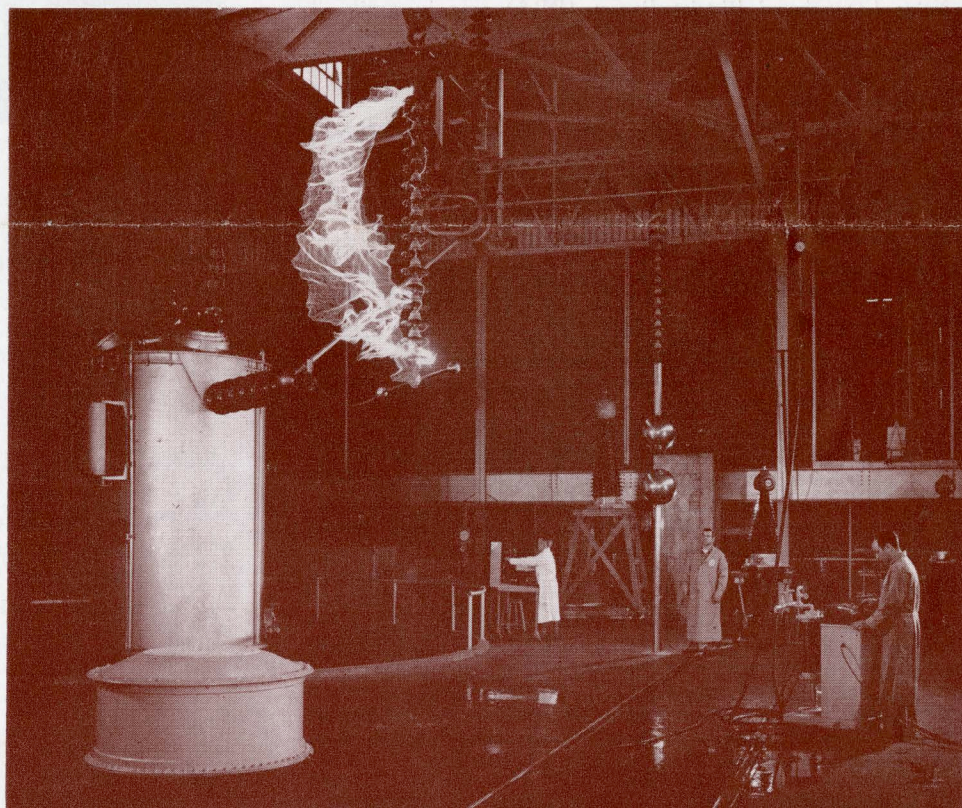
Registration—8 A.M.-5 P.M.
Technical Sessions—9:00 A.M.
General Session—2 P.M.
Ladies' Luncheon at M. O'Neil Com-
pany's Georgian Room—12:30 P.M.
Trip to Ohio Brass Co.—7:20 P.M.

April 23—THURSDAY

Registration—8:00 A.M.
Trip to Chrysler Stamping—8:30 A.M.
Trip to Goodyear Tire & Rubber—
9:00 A.M.
Technical Sessions—9:00 A.M.
Ladies' Luncheon at Fairlawn Country
Club—12 N.
Trip to Ohio Edison Test Line—
1:15 P.M.
Trip to B. F. Goodrich Research Center
—1:15 P.M.
Ladies' Visit to Stan Hywet Hall &
Gardens—2 P.M.
Technical Sessions—2 P.M.
Cocktail Hour—6 P.M.
Banquet—7 P.M.

April 24—FRIDAY

Registration—8:00 A.M.
Trip to Firestone Research—9 A.M.
Technical Sessions—9:00 A.M.
Trip to Columbia-Southern Chemical—
12 N.
Technical Sessions—2 P.M.



Ohio Brass High Voltage Test, Barberton, Ohio

The 1959 East-Central District Meeting of AIEE will be held April 22-24 at the Hotel Sheraton, Akron, Ohio. The Rubber and Plastics Sub-Committee will hold its Eleventh Annual Technical Conference in conjunction with that meeting. General theme of the meeting is **"Electricity—Major Tool of Industry."** Scheduled events include social activities, technical sessions and inspection trips.

"EARLY BIRD" RECEPTION: On Tuesday, April 21, from 8:00 P.M. to 10:00 P.M. an "Early Bird" Reception will be held in the Ohio Room, second floor, Sheraton Hotel, for early arrivals and their wives.

GENERAL SESSION: The General Session will be held in the Main Ballroom of the Sheraton Hotel at 2:00 P.M. on Wednesday, April 22. Mr. Clarence H. Linder, Vice-President of Engineering for the General Electric Company, will be the main speaker.

HOTEL RESERVATIONS: The facilities of the Sheraton Hotel have been reserved for the AIEE members for this meeting. Requests for room reservations should be made **directly to the hotel** using the enclosed card. Hotel room reservations should be made as far in advance as possible. In the event of an overflow the Sheraton Hotel will arrange reservations at another hotel or motel.

All rooms are with shower or combination tub and shower. Rates are as follows:

SINGLE ROOMS—\$6.50, \$7.50, \$8.85, \$10.85
DOUBLE ROOM—\$10.00, \$11.00, \$12.35, \$14.85
TWIN BEDS—\$14.85, \$16.00, 18.00
DORMITORY ROOM—4 or more persons, \$3.75 up per person
Suite rate on request.

STUDENT PAPER COMPETITION: The District 11 Prize Paper Competition will be held on Thursday, April 23, in parlor C 9:00 A.M. to 12:00 A.M. and 2:00 P.M. to 5:00 P.M. The winning papers from the 15 Student Branches within the District will be presented and prizes awarded. The prize is \$25.00 and a trip to the Summer General Meeting at Seattle; second prize is \$25.00; third prize, \$15.00. All members are invited to attend all or any part of the competition.

REGISTRATION: The Registration Desk will be on the 2nd floor of the Sheraton Hotel. It will be open 8:00 to 10:00 P.M., Tuesday, April 21, and daily thereafter 8:00 A.M. to 5:00 P.M. Advance registrations are encouraged. **All fees** for social functions and inspection trips will be collected **upon registration**. Registration fees will be \$3.00 for members, \$5.00 for non-members. No charge for students and families of members.

BANQUET: A banquet for all members, wives and guests will be held in the Ballroom of the Hotel Sheraton at 7:00 P.M. on Thursday, April 23. Mr. Darrell C. Romick, Head of the Astronautics Section of the Weapons Systems Department of Goodyear Aircraft Corp., will speak on "The Dawn of the Age of Space Flight."

Dr. Romick, who is responsible for current astronomical applications and long-range project investigation, has gained a world reputation as an authority on rockets and space travel. His concept of a space ship is one of the few which are considered feasible. His illustrated lecture will paint a comprehensive and authentic picture of the development of space flight. The objectives and value of space flight to mankind will be outlined and the status of progress toward its achievement summarized.

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AIEE EAST CENTRAL DISTRICT MEETING AND RUBBER AND PLASTICS CONFERENCE

ADVANCE COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 40c each (80c each to nonmembers), by sending enclosed order form and remittance to the AIEE Order Department, 33 West 39th Street, New York 18, N. Y. Mail orders, particularly from out-of-town members are advisable, inasmuch as an adequate supply of each paper at the meeting cannot be assured. Coupon books in \$10 denominations are available for those who wish to avoid remittance by check or otherwise. The Transactions Papers will also be published in the bimonthly publications.

Note: Unnumbered District Papers (DP.*) may be available at or after the meeting, if copies are provided by the author. They are not intended for publication in the Transactions and are not presently scheduled for reproduction in any form by the Institute.

Note: The TRANSACTIONS papers will be printed in the bimonthly publications as follows:

- I COMMUNICATIONS AND ELECTRONICS.
- II APPLICATIONS AND INDUSTRY.
- III POWER APPARATUS AND SYSTEMS.

Wednesday, April 22

9:00 a.m.—High Voltage Cables

Sheraton Room

Chairman: T. F. BRANDT, Ohio Brass Co.

- DP.* The History of High Voltage Cable. E. J. Merrell, Phelps Dodge Copper Products Corp.
- DP.* The Cooperative Effort of Manufacturers Educational Institutions and Power Utilities in the Development and Test. of Extra High Voltage Cable Systems. L. I. Komives, Detroit Edison Co.
- DP.* Manufacturers' Viewpoint on the Production of High Voltage Cable. E. D. Eich, Anaconda Wire & Cable Co.

9:00 a.m.—Computers

Parlor E

Chairman: V. R. LALLI, Thompson Products Co.

- DP.* A Four Axis Numerical Contouring Control. P. H. McGarrell, Thompson-Ramo-Wooldrige, Inc.
- DP.* Some Applications Involving Convolution Integrals and Their Solution. Dr. F. E. Brammer, Case Institute of Technology.
- DP.* Research in Computer Programming. Prof. R. J. Nelson, Case Computing Center.

2:00 p.m.—General Session

Ballroom

Welcome Speeches:

Keynote Address—Clarence H. Linder, Vice President, Engineering, General Electric Co.

Thursday, April 23

9:00 a.m.—High Voltage Transmission

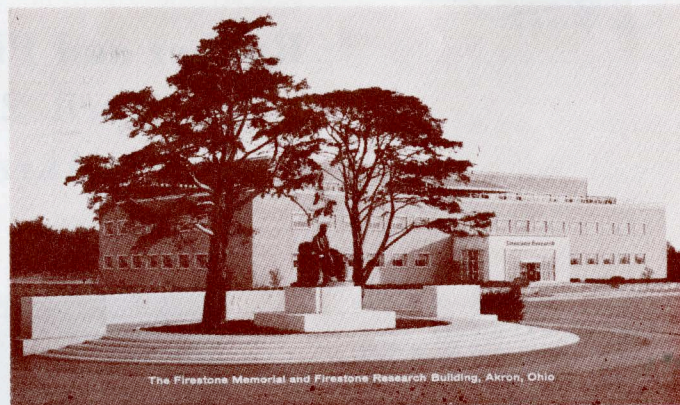
Sheraton Room

Chairman: A. D. LANTZ, Ohio Brass Co.

- DP.* Tapered Tubular Steel Transmission Structures. W. G. Anderson, Union Metal Manufacturing Co.
- DP.* Bundle Conductor Fault Current Tests Tidd-Muskingum 345 KV Line. C. R. Rawlins-D. H. Sandell, Aluminum Company of America.



The B. F. Goodrich Co.



The Firestone Memorial Research Building

DP59-562. 345 Kv Transmission Line Field & Laboratory Testing. C. R. Bond-P. A. Fetterolf, Ohio Edison Co.

9:00 a.m.—Rotating Machinery

Parlor E

Chairman: C. G. VEINOTT, Reliance Electric and Engrg. Co.

- DP58-1395. Measurement of Rapidly Changing Temperatures. J. E. Shea, Underwriters Laboratories, Inc.
- DP.* Application Problems in the Measurement of Motor Winding Temperatures. C. E. Green-T. Spink, Jr.-D. Vandeventer, Leeds & Northrup Co.
- DP58-1393. Start Winding Temperature Measurement of Fractional Horsepower Motors. R. E. Seely, General Electric Co.
- DP.* Temperature Measurement of Fractional Horsepower Motors. W. R. VanDyke, Westinghouse Electric Corp.
- CP58-1278. Temperature Measurement of Motor Windings on Stalled Rotor. V. G. Vaughan-A. P. White, Metals & Controls Corp.

12:00 Noon—Luncheon Recess

2:00 p.m.—Electrical Drive Equipment

Parlor E

Chairman: L. E. BUSS, General Electric Co.

- DP.* Advantages of Rating Large Motors at 60 Degree C Rise. L. F. Hayne, Allis-Chalmers Co.
- DP.* A-C Torque Motors for Steel Processing Lines. L. M. Berkley, Reliance Electric & Engineering Co.
- CP58-1200. Characteristics of Electrical Loads in a Cement Plant. L. C. Pringle, Hercules Cement Company.
- DP.* Electric Drive Equipment for a Coal Loading Dock. J. E. Oram, General Electric Co.

2:00 p.m.—Industrial Heating

Sheraton Room

Chairman: W. V. TARACUK, Firestone Tire & Rubber Co.

- 58-1259. Load Characteristics of a Submerged Arc Silicon Smelting II. Furnace. G. Grant III, Dow Corning Corp.
- DP.* Forgings in Industry & New Induction Heating Applications. J. Edwards-W. C. Ekin, Westinghouse Electric Corp.
- DP.* Dielectric Heating. C. Loper, Allis-Chalmers Co.

Friday, April 24

9:00 a.m.—Static Components

Parlor E

Chairman: W. F. GARDNER, Westinghouse Electric Corp.

- DP.* Techniques in the Application of Silicon Power Rectifiers. Dr. R. D. Lynch, Westinghouse Electric Corp.
- DP.* Rectifiers for General Industrial Power Applications. W. E. Gutzwiller, Allis-Chalmers Co.
- DP.* Thermo-Electric Application. Dr. S. J. Angello, Westinghouse Electric Corp.

9:00 a.m.—Industrial Lighting

Sheraton Room

Chairman: L. F. KIELSMEIER, Ohio Edison Co.

- DP.* New Concepts for Meeting Human Needs with Light. Morgan Christensen, General Electric Co.

DP.* Design & Application of a New High Frequency Power Source for Fluorescent Lighting. W. H. Johnson, Westinghouse Electric Corp.

DP.* Lighting From the Industrial User's Viewpoint. D. J. Rose, Babcock & Wilcox Co.

2:00 p.m.—Relaying & Distribution

Sheraton Room

Chairman: N. R. MONOHAN, Ohio Edison Co.

- DP.* Protective Relaying for Utility Industrial Power System Electrical Interconnections. S. P. Tomasek, Columbus & Southern Ohio Electric Co.
- DP.* Backup Protection with Distance Relays. Stratman Cooke, Toledo Edison Co.
- DP.* Self-Regulating Distribution Transformer. H. F. Naramore, Line Material Co.
- 59-569 Analysis of Capacitor Application as Affected by Load Cycle. III R. F. Cook, Westinghouse Electric Corp.

2:00 p.m.—Automation

Parlor E

Chairman: P. S. BECHTOL, The B. F. Goodrich Co.

- DP.* Effective Design for Automation and Its Personnel. F. T. Perkes, Thompson-Ramo-Wooldrige, Inc.
- DP.* The New B. B. Goodrich Semi-Automatic Individual Tire Building Machine. H. G. Shively, B. F. Goodrich Co.
- DP.* Automation in Industry. N. K. Conrad, Ford Motor Co.

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He will discuss the physical well-being of space travelers; the orbital principles upon which space flight will operate; the devices and methods which will be used to set up and use a system of space travel and the cost and time required for such a program.

Dessert entertainment will be provided by the Akron Chapter Chorus and selected quartets of S P E B Q S A.

LADIES' ACTIVITIES: Reception for early arrivals 8:00 P.M.-10:00 P.M. **Tuesday, April 21** in the Ohio Room.

Hospitality Room for visiting ladies, open from 9:00 A.M. on Wednesday, Thursday and Friday.

Wednesday at 12:30, a luncheon (\$2.00) for the ladies, with casual modeling of spring fashions, followed by bridge if desired, at M. O'Neil Company's Georgian Room.

Wednesday evening, (7:20) ladies are welcome on inspection trip to Ohio Brass Company. (\$1.00)

Thursday, 12:00 noon, luncheon (\$2.50) at Fairlawn Country Club.

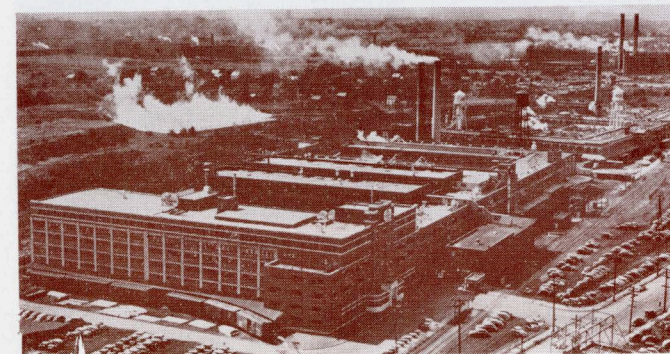
Thursday, 2:00 P.M. (\$1.25) visit to Stan Hywet Hall & Gardens. This 38 acre estate and main house of 65 rooms represents one of the finest examples of English Tudor Revival architecture in the United States. Stan Hywet (pronounced "hee-wet") was built 1911-1915 by the late Frank A. Seiberling, founder of the Goodyear and Seiberling Rubber Companies. It and its gardens are a memorial to England's great Elizabethan period, a monument to America's period of great wealth. It is noteworthy for its Great Hall, Music Room, Gobelin tapestries, rare porcelains, antiques and art treasures of the 17th and 18th centuries. As intended by its builder whose home it was, it continues to serve today as a cultural center for the City of Akron.

Thursday, 6:00 P.M. cocktail hour.

Thursday, 7:00 P.M. banquet (Men \$6.50; Ladies \$5.50).

Mr. Darrell Romick, Head of Astronautics Section of Weapons Systems Department of Goodyear Aircraft will be the speaker.

INSPECTION TRIPS: Seven inspection trips have been planned. Make reservations on the enclosed card. Tickets, required



General Tire and Rubber Co.

for each trip, may be had at the Registration Desk. A brief description of these interesting events follows the tabular summary:

Place	Date	Leave	Return
Ohio Brass Company (\$1.00)	Wednesday, April 22	7:20 P.M.	10:40 P.M.
Goodyear Tire & Rubber (\$1.00)	Thursday, April 23	9:00 A.M.	12:00 Noon
Chrysler Stamping (\$2.00)	Thursday, April 23	8:30 A.M.	12:00 Noon
Ohio Edison Test Line (\$2.00)	Thursday, April 23	1:15 P.M.	5:00 P.M.
B. F. Goodrich Research Center (\$2.00)	Thursday, April 23	1:15 P.M.	5:00 P.M.
Firestone Research (\$1.00)	Friday, April 24	9:00 A.M.	12:00 Noon
Columbia-Southern Chemical (\$1.00)	Friday, April 24	9:00 A.M.	12:00 Noon

Ohio Brass Company—Barberton, Ohio, Wednesday, April 22. Bus from Hotel at 7:20 P.M. Ladies especially invited to witness this demonstration showing spectacular ionization and corona phenomena. The explosive force of the high-voltage discharges makes one realize the magnitude of the problems encountered in building reliable insulators, arrestors and bushings. (\$1.00)

Goodyear Tire & Rubber Company—Goodyear Hall & Plant #2, Thursday, April 23. Bus from Hotel at 9:00 A.M. The Goodyear trip will include the Rubber Exhibit and processing of rubber compounds and fabrics from raw materials to finished products.

The Rubber Exhibit dramatizes the history of rubber from the discovery of vulcanization to the present day. At Plant #1 will be seen the mixing of rubber compounds and processing to tire fabric through the most modern machines. Inspection of one of the high-voltage motor control rooms will be of special interest to electrical engineers.

At Plant #2, the visitors will observe the building and curing of tires and modern automatic tire machines and curing processes.

The manufacture of industrial rubber products including large conveyor belts, automobile floor mats and flooring will also be included in this tour. (\$1.00)

Chrysler Corporation—Stamping Plant—Twinsburg, Ohio, Thursday, April 23. Bus from Hotel, 8:30 A.M. Largest stamping plant in the world, both in overall floor space and in production capacity. Completed in 1958, it is also one of the most modern. It has a floor space of 34 acres all under one roof. 28 major press lines stamp out major auto body components of all sizes including doors, quarter panels, deck lids, roofs, instrument panels, etc. The electrical system consists of a main substation of 37,500 Kva capacity stepping power down from 138 Kv to 13.8 Kv. The 13.8 Kv system distributes power to the plant to nine double-ended substations. 11 single-ended substations having a total transformer capacity of 46,500 Kva. Besides large motor and welding loads, utilization equipment includes 5,927 fluorescent light fixtures, 18 motor control centers, 1,344-1,000 watt mercury vapor lights, 426 miles of building control wiring and 4.6 miles of 15,000 volt primary cable. (\$2.00)

Ohio Edison Company—345 Kv Test Line—Louisville, Ohio, Thursday, April 23. Bus from Hotel, 1:15 P.M. Ohio Edison Company is conducting tests on a one-mile section of 345 Kv line near Louisville, Ohio. These tests include continuous monitoring of wind and weather conditions and their effects upon various component parts of line, including conductors, towers, hardware and other accessories. This monitoring is performed with the aid of a special laboratory built by the Preformed Line Products Company of Cleveland. It is housed in a trailer which provides living quarters for four technicians so that personnel are available to observe and record the effects of unusual weather conditions. Tests are also being conducted to simulate icing conditions and broken conductors. These tests made over a one-year period are expected to not only provide worthwhile design data but also valuable performance data on various component parts of line. (\$2.00)

B. F. Goodrich Research Center—Brecksville, Ohio, Thursday, April 23. Bus from Hotel, 1:15 P.M. A large modern streamlined workshop of science. Chemical and physical research on synthetic rubbers, plastics, rubber chemicals, adhesives, textiles, insulating materials. Outstanding equipment includes a latest model electron microscope, two mass spectrometers, a cobalt-60 source of radiation, and a solar furnace. A feature of the tour will be a platform show demonstrating some new polymeric insulating materials. (\$2.00)

Firestone Research—Akron, Ohio, Friday April 24. Bus from Hotel, 9:00 A.M. A conducted tour of the company's chemical and

RUBBER AND PLASTICS CONFERENCE, April 22-24, 1959

Wednesday, April 22

9:00 a.m.—Nylon Tire Cord Processing

Ballroom
Chairman: NEWELL A. WILLIAMS, Goodyear Tire & Rubber Co.

- C.P.* Preparation and Processing of Nylon Tire Cord. J. W. Bolymer, Supvr. Ind. Technical Service, E. I. DuPont de Nemours & Co., Inc.
- C.P.* Nylon Treating Drives. Newell A. Williams, Goodyear Tire & Rubber Co. and C. E. Robinson, Reliance Electric & Engineering Co.

2:00 p.m.—General Session

Thursday, April 23

9:00 a.m.—Calendering Session

Ballroom
Chairman: FRANKLIN E. PALMER, The General Tire & Rubber Co.

- C.P.* An Analysis of Calender Drives for Rubber Processing. F. E. Palmer, The General Tire & Rubber Co.
- C.P.* Windup Drives and Control. A. V. Alexeff, Industrial Ovens, Inc.

2:00 p.m.—Static Components

Ballroom
Chairman: RICHARD D. HEYBURN, The Firestone Tire & Rubber Co.

- C.P.* Semiconductors in the Rubber and Plastics Industry. George F. Muller, General Electric Co.
- C.P.* Applying Magnetic Amplifiers. James R. Walker, GEMCO Electric Co.

Note: C.P.* Will be available in proceedings booklet form after the conference.

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physical research laboratories, including a discussion period under the leadership of Dr. J. W. Liska, Assistant Director of the company's chemical and physical research. A 15-minute film on tire distortion at high speeds will be shown following the laboratory tour. This film demonstrates the precautions which must be taken in rubber compounding and tire construction to maintain highway safety under the stress and strain of high-speed driving. (\$1.00)

Columbia-Southern Chemical Corp.—Barberton, Ohio, Friday, April 24. Bus from Hotel, 9:00 A.M. Columbia-Southern Chemical Corporation is one of the nation's leaders in the production of industrial chemicals. It operates its own limestone mine, sand plant, and salt wells to provide raw materials for operations and maintains a large fleet of tank cars and river barges.

C-S generates a major portion of its power requirements. The generation phase of its industrial power operations produces and distributes enough power to serve the needs of a medium size city.

In addition to seeing the operation of a large chemical processing plant those taking the tour will see the following electrical installations:

1. Generator facilities.
2. Steam production facilities
3. Rectifier installation featuring DC mercury arc rectifiers with capacity of 35,000 kw.
4. Experimental high voltage silicon rectifiers with capacity of 500 kw.
5. Completely automated chemical production plants where industrial process controls are present.

COMMITTEE MEETINGS:

Wednesday, April 22, 1959

- 8:30 A.M.—District Executive Committee—Parlor B
1:30 P.M.—District Executive Committee Luncheon—Parlor C

Thursday, April 23, 1959

- 9:00 A.M.—Institute Executive Committee—Parlor B
12:00 Noon—Institute Executive Committee Luncheon—Parlor B
2:00 P.M.—Institute Executive Committee—Parlor B

Friday, April 24, 1959

- 12:00 Noon—Rubber & Plastics Subcom. Luncheon—Parlor C

TICKETS: Tickets for all events will be available at the Registration Desk, Second Floor, Hotel Sheraton, open 8:00 P.M. Tuesday, April 21 and daily during the meetings from 8:30 A.M. to 5:00 P.M.

Friday, April 24

9:00 a.m.—Plastics Extrusion

Ballroom
Chairman: ANTON G. SEIFRIED, The B. F. Goodrich Co.
Symposium on Heating for Plastics Extrusion.

- C.P.* Induction Heating for Plastic Processing Machines. Winchel J. Goodwin, Hale & Kullgren, Inc.
- C.P.* Heating for Plastics Extrusion. Thomas C. Jones, National Rubber Machinery Co.
- C.P.* Heating Problems of Plastics Extruders. Robert Mansfield, The B. F. Goodrich Co.
- C.P.* Application of Saturable Core Reactors to Injection Molding. Glen Pettit, Barber Coleman Co.
- C.P.* Plastics Extruder Drive Characteristics. Gordon D. Campbell, Jr., Reliance Electric & Engineering Co.

2:00 p.m.—Trends in New Machines & Processes

- Ballroom
Chairman: R. L. HOSTETLER, Adamson United Co.
- C.P.* Trends in New Machines and Processes. Harold P. Lamb, Adamson United Co.
- C.P.* Aetna Automatic Mill. R. Cloyd Rogers, Hale & Kullgren, Inc.
- C.P.* Effects of Radiation on Elastomers & Plastics. Dale J. Harmon, B. F. Goodrich Research Center.

3:45 p.m.—Rubber & Plastics Working Committee Reports

- Ballroom
- C.P.* Report of Working Group on Problems Due to Atmospheric Contamination. Jack C. Hall, Goodyear Tire & Rubber Co.
- C.P.* Report of Working Group on Standards for Rubber & Plastics Industries. William S. Watkins, Ohio Rubber Co.

Delegates are urged to secure tickets for events they wish to attend as early as possible since transportation arrangements will depend upon tickets sold.

COMMITTEE CHAIRMEN:

Members of the East-Central District Committee are: W. H. Sammis—Chairman, R. J. Feeney—Vice Chairman, C. H. Fleming—Assistant Chairman, F. C. Timberman—Secretary, E. A. Rothfus—Technical Papers, J. M. Sheadel—Inspection Trips, K. L. Boyer—Finance, C. H. Gohlke—Hotel Arrangements, G. N. Himes—Publicity, K. F. Sibila—Students, E. L. Smith—Chairman, Rubber & Plastics Subcommittee and Akron Section, Mr. & Mrs. J. E. Rose—Social Activities, H. R. Kronenberger—Registration, R. J. Myers—Transportation.



The Goodyear Tire and Rubber Co.

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